

What is claimed is:

- 1 1. A data driver of a display forming an image frame
2 by sequentially scanning horizontal lines, the data driver
3 comprising:
4 a shift register receiving image data of three primary
5 colors in serial and outputting the image data of
6 the three primary colors in parallel within each
7 of scan durations of the horizontal lines;
8 a sample and hold register acquiring the image data
9 from the shift register;
10 a gamma multiplexer outputting gamma reference voltages
11 for the three primary colors in a sequence of the
12 primary colors within each of the scan durations
13 of the horizontal lines;
14 three digital-to-analog converters for gamma
15 calibration, receiving the image data of the
16 three primary colors from the sample and hold
17 register and the gamma reference voltages for the
18 three primary colors from the gamma multiplexer,
19 and outputting calibrated image signals of the
20 three primary colors, respectively; and
21 three buffers respectively receiving the calibrated
22 image signals of the three primary colors from
23 the three digital-to-analog converters, in the
24 sequence of the primary colors.
- 1 2. A data driver of a display forming an image frame
2 by sequentially scanning horizontal lines, the data driver
3 comprising:

4 a shift register receiving image data of three primary
5 colors in serial and outputting the image data of
6 the three primary colors in parallel within each
7 of scan durations of the horizontal lines;
8 a sample and hold register acquiring the image data of
9 the three primary colors from the shift register;
10 a first multiplexer receiving the image data of the
11 three primary colors from the sample and hold
12 register and outputting them in a sequence of the
13 primary colors within each of the scan durations
14 of the horizontal lines;
15 a second multiplexer outputting gamma reference
16 voltages for the three primary colors in the
17 sequence of the primary colors within each of the
18 scan durations of the horizontal lines;
19 a digital-to-analog converter for gamma calibration,
20 receiving the image data from the first
21 multiplexer and the gamma reference voltages from
22 the second multiplexer, and outputting calibrated
23 image signals of the three primary colors; and
24 a buffer receiving the calibrated image signals from
25 the digital-to-analog converter and outputting
26 the calibrated image signals in the sequence of
27 the primary colors.

1 3. A data driver of a display forming an image frame
2 by sequentially scanning horizontal lines, the data driver
3 comprising:

4 a shift register receiving and outputting image data of
5 the three primary colors in a sequence of the

6 primary colors within a scan duration of one of
7 the horizontal lines;
8 a sample and hold register acquiring the image data
9 from the shift register;
10 a gamma multiplexer outputting gamma reference voltages
11 for the primary color in the sequence of the
12 primary colors;
13 a digital-to-analog converter for gamma calibration,
14 receiving the image data from the sample and hold
15 register and the gamma reference voltages from
16 the gamma multiplexer, and outputting calibrated
17 image signals of the three primary colors; and
18 a buffer receiving the calibrated image signals from
19 the digital-to-analog converter and outputting
20 the calibrated image signals in the sequence of
21 the primary colors.

1 4. A data driver of a display forming an image frame
2 composed of sub-frames of three primary colors by
3 sequentially scanning horizontal lines for each sub-frame,
4 the data driver comprising:
5 a shift register receiving and outputting image data of
6 one of the three primary colors within each of
7 scan durations of the horizontal lines;
8 a sample and hold register acquiring the image data
9 from the shift register;
10 a gamma multiplexer outputting gamma reference voltages
11 for the primary color to which the image data
12 from the shift register belongs;

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13 a digital-to-analog converter for gamma calibration,
14 receiving the image data from the sample and hold
15 register and the gamma reference voltage from the
16 gamma multiplexer, and outputting a calibrated
17 image signal; and
18 a buffer receiving the calibrated image signal from the
19 digital-to-analog converter.